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PURPOSE

The information and illustrations contained in this guidebook are primarily drawn from the following U.S. Army Field Manuals: FM5-15, FM31-10, FM21-75, and FM5-20. Due to the evolving nature of warfare, information has been added and adjusted where appropriate. The text and illustrations have been condensed and reorganized with the following aspects in consideration:

1. To suit the capabilities and equipment of the average American Citizen.
2. To reduce the size, weight, cost and complexity of the booklet.
3. To bring the guidebook to market in a hasty and economical manner.

Fortification designs for heavy artillery and military equipment have been omitted due to the inability of the average American Citizen to acquire these assets.

My desire for compiling this booklet was simple. I wanted to equip the average American citizen with the knowledge necessary to repel foreign occupation. The primary topic addressed in this volume is defense. This booklet will be the first in a series of publications.

I sincerely desire that if our country is tested, we will unite to defend each other, regardless of our philosophical differences. That we will defend the resources and infrastructures we share. And to do so, we will work in unison to construct an impenetrable web of fortifications.

By no means is this booklet meant to be an exhaustive reference. I have organized the information herein to stimulate your creative abilities. Every conflict is different. The strategies employed should be adapted to each situation accordingly. Your ingenuity and resolve will be tested. However, if you choose to only abide by the strategies contained in this booklet, you will most assuredly become a poisonous thorn inside the boot of our enemies.

If any force rises to jeopardize the nation, our resolve must be to annihilate that force. If our conventional forces stand, we must work in conjunction with them. We must work together to secure our resources and infrastructures. Attempts must be made to facilitate the sharing of resources and to establish methods of communication between the Government and Civilian Networks.

The strategies contained in this booklet are primarily defensive in nature. In order to drive out and crush an enemy, you must also consider offensive strategies. This booklet in combination with my other publications will provide you with a more thorough strategic comprehension.

TOOLS

There is a good chance that you already own the tools necessary to construct formidable fighting positions. And, if you do not, you can afford to purchase them. Therefore, the first task order is to assemble the following tools:

1. D Handled Shovel
2. Ax w/spare handles
3. Maul
4. Crowbar
5. Crosscut saw
6. Pick mattock
7. Handsaw
8. Bolt cutter
9. Machete

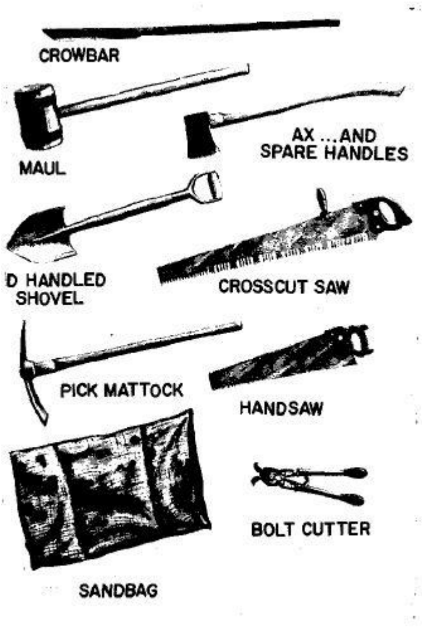
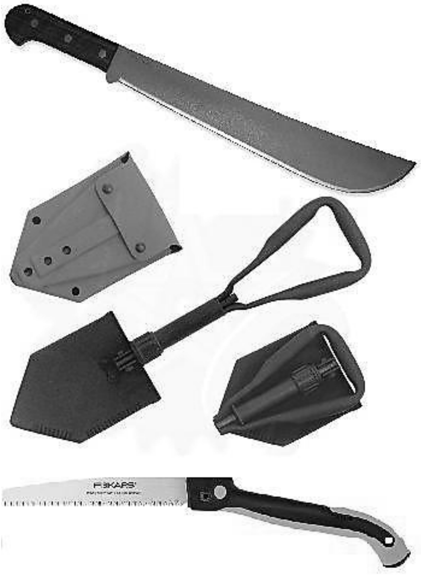


Figure 2-1. Intrenching equipment.

If you do not have the ability to purchase these tools or to bring them with you, then at a minimum, you will need to obtain the following:

1. Entrenching tool
2. Folding saw
3. Machete



If you do not own these tools, stop what you are doing and purchase them right now.

Once you have acquired your tools, make sure that you test them out. Your life may depend on the quality of these tools. Test them thoroughly, take good care of them, and keep them stored in your rucksack.

METHODOLOGY

The method of fortification described in this book will follow a series of stages. The first stage will describe a fighting position that is very quick to construct. Each stage following this will outline a series of improvements that can be made upon that fighting position. The ultimate objective is to create a fighting position that can withstand all types of enemy assault.

Stage 1: Skirmishers Trench

The first step is to construct a quick fighting position using your shovel or entrenching tool. This fighting position is called a Skirmishers Trench, also known as a Hasty Fighting Position.

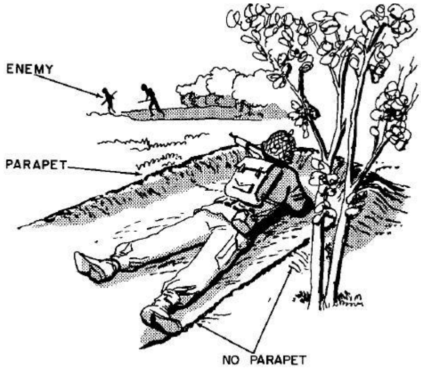


Figure 24. Skirmisher's trench.

This shallow pit-type emplacement provides a quick firing position for the individual rifleman. To construct the position, lie prone on your side and with your entrenching tool, scrape and pile the soil in a low parapet between yourself and the enemy. This way, a shallow, body length pit can be formed quickly.

The trench should be oriented with respect to the enemy line of fire so that it is least vulnerable to direct fire. The parapet should be about 18 inches (or half an arm's length) thick to provide adequate protection. In a Skirmisher's Trench, a soldier presents a low silhouette to the enemy and is afforded some protection from small arms fire. However, overhead protection is not provided. The location of the trench should be considered carefully. If able, construct the fighting position underneath trees or bushes to conceal your position from enemy aircraft.If time permits and the general attack halts, the trench can later be developed into a Prone Emplacement Shelter.

Stage 2: Prone Emplacement

This stage improves upon the Skirmishers Trench. It offers greater protection to the rifleman due to its increased depth. The dimensions are approximate and should be adjusted according to the comfort of the occupant. The dimensions of the Prone Emplacement are approximately 2 feet deep by 2 feet wide by 6 feet long. The excavated soil should be added to the parapet for additional resistance to small arms fire.

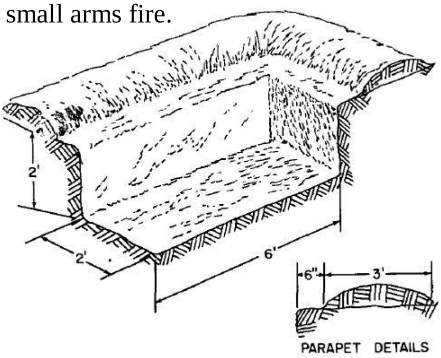


Figure 25. Prone emplacement.

Stage 3: One Man Foxhole

The Foxhole is the basic defensive position of the individual rifleman. The size, shape, and methods of construction vary with the tactical situation and condition of the terrain. They may be developed from the Prone Emplacement. All fighting positions are designed primarily for good field of fire; concealment is a secondary consideration.

Foxholes provide excellent protection against small arms fire, artillery shell fragments, airplane fire or bombing, and the crushing action of tanks. The one and two man Foxholes are basic types. The Two Man Foxhole is used when men must work in pairs or when, for psychological reasons, battlefield comradeship is desirable.

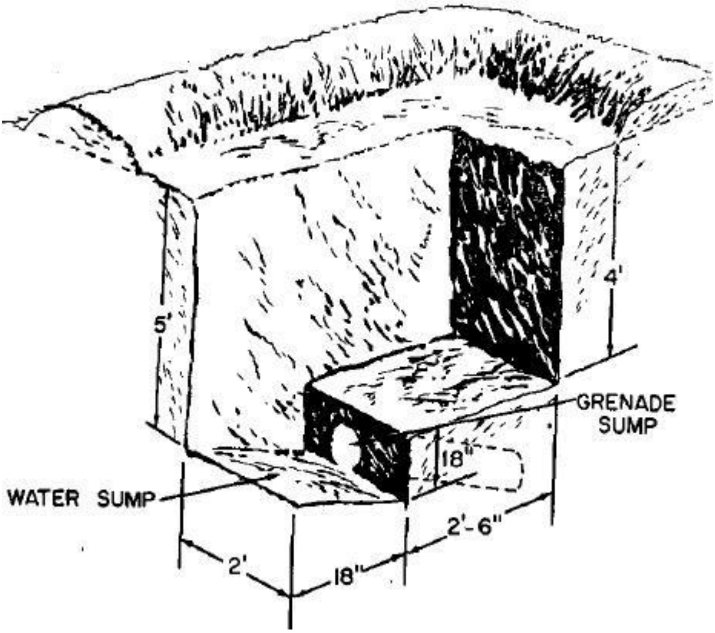
Foxholes are designed with the longer side generally facing the enemy. But, they are also distributed around weapon emplacements to provide all-around defense. In your case, they should be placed around vital resources and communities to defend against enemy advancement. Troops occupy their Foxholes only when an attack is imminent or in progress.

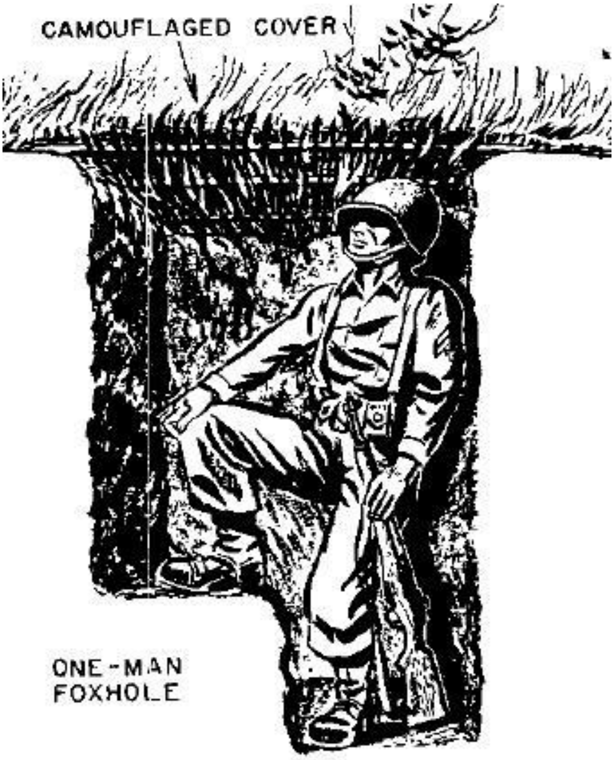
The size and shape of the foxhole are affected by the following:

1. It is as small as practicable, to present the minimum target to enemy fire.
2. It is wide enough to accommodate the shoulders of a man sitting on the firestep.
3. It is long enough to permit the use of large-size entrenching tools.
4. It is at least 4 feet deep to the firestep, from which the standing occupant should be able to fire.
5. A sump is dug in one end for bailing out water and for the feet of a seated occupant.
6. The general dimensions of the Foxhole are as follows: 2 feet wide, 3 ½ feet long, 4 to 5 feet deep depending upon the height of the man, and additional depth at one end for the sump.

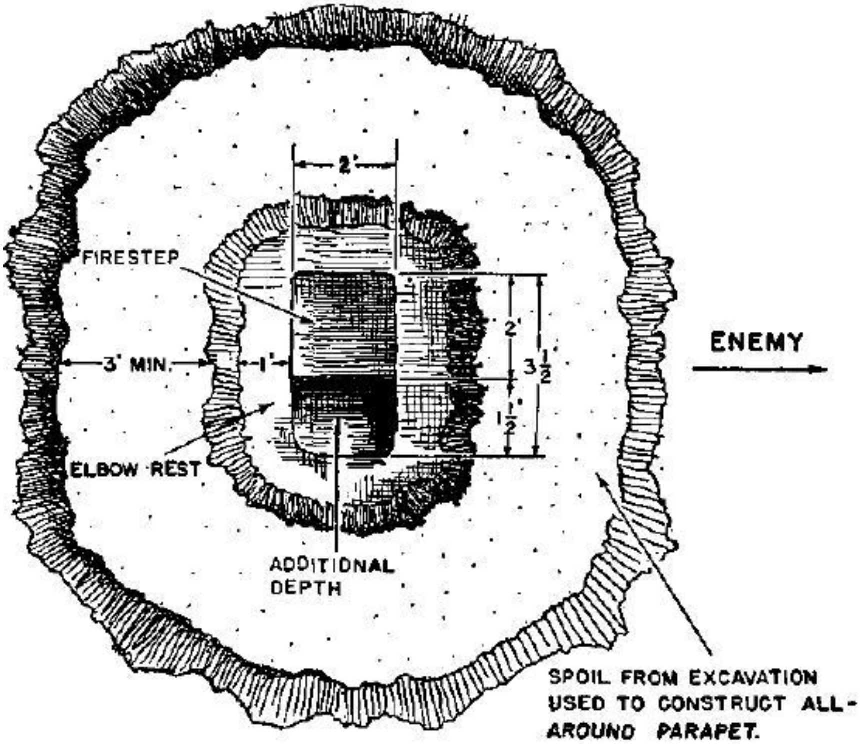
In most types of soil, the Foxhole gives positive protection against the crushing action of tanks, provided the soldier crouches at least 2 feet below the ground surface.

In very sandy or very soft soils, it may be necessary to revet the sides to prevent caving in. The spoil is piled around the hole as a parapet, 3 feet thick and approximately ½ foot high, leaving a berm or shelf wide enough for the soldier to rest his elbows upon while firing. If turf or topsoil is to be used to camouflage this parapet, the soldier first removes the topsoil from an area 10 feet square and sets it aside until the foxhole is completed.

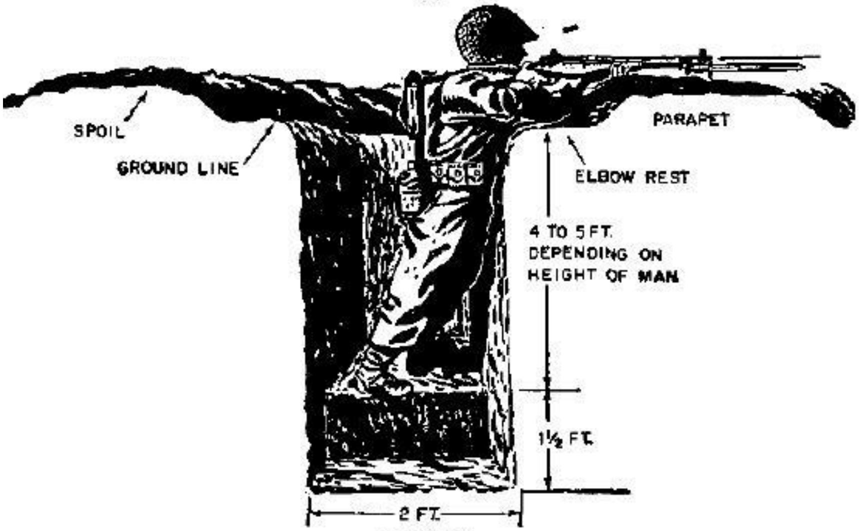




ⓒ Figure 19—Continued.



PLAN
①



SECTION
②

Figure 17. One-man foxhole. (Camouflage omitted.)

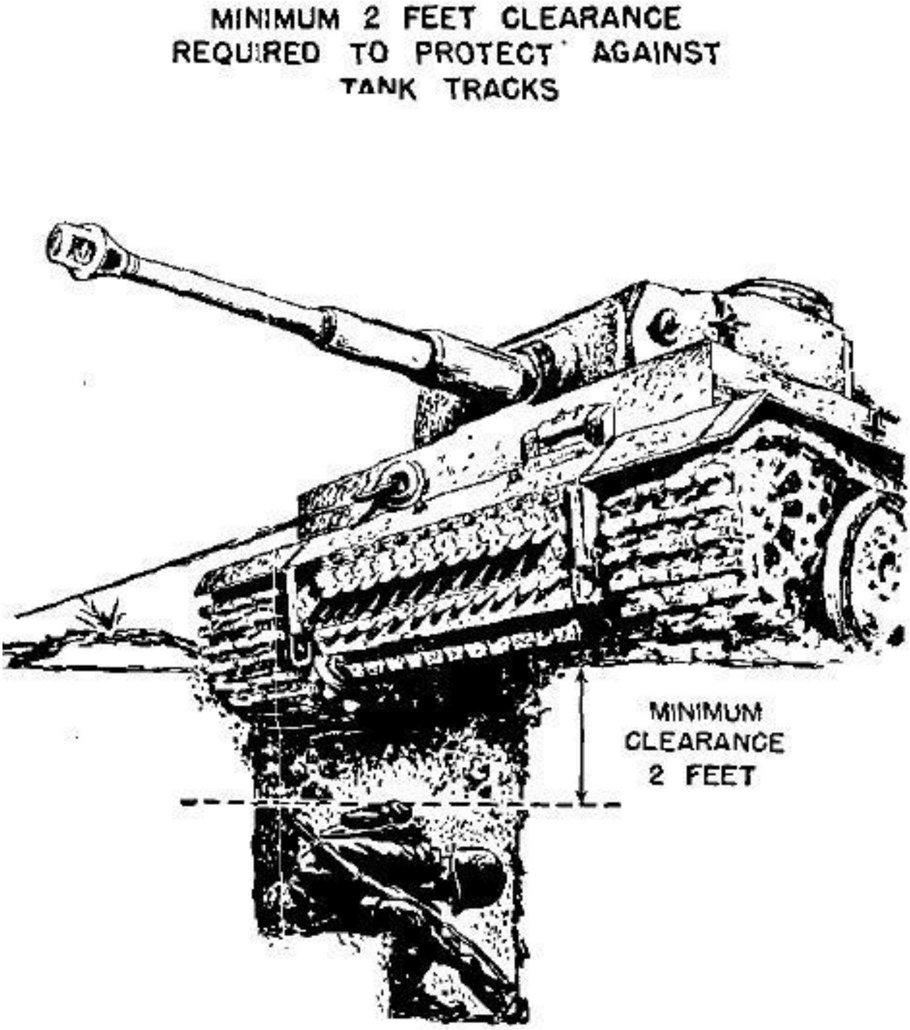

MINIMUM 2 FEET CLEARANCE REQUIRED TO PROTECT AGAINST TANK TRACKS
MINIMUM CLEARANCE 2 FEET

Figure 18. One-man foxhole protects against tanks.

Stage 4: Two Man Foxhole

Constructing the Two Man Foxhole is the ultimate objective of the previous stages. Every stage following this one is designed to make improvements upon the Two Man Foxhole. When constructing a two man foxhole, make sure that you clear your field of fire by removing vegetation that is obstructing your view. Remove branches, saplings and bushes that limit your field of view. But do not remove too much. The enemy may notice the clearing.

In a defensive position, the Two Man Foxhole is generally preferred to the One Man emplacement. The Two Man Foxhole consists essentially of two adjacent One Man Foxholes. It is constructed the same as the One Man Foxhole except for the location of the grenade sump which is dug into the face of the Foxhole towards the enemy (refer to the following image).

Since it is longer than the One Man type, the Two Man Foxhole offers somewhat less protection against tanks crossing along the long axis, as well as against airplane strafing and bombing and artillery shell fragments.

The Two Man Foxhole has many advantages over the One Man Foxhole:

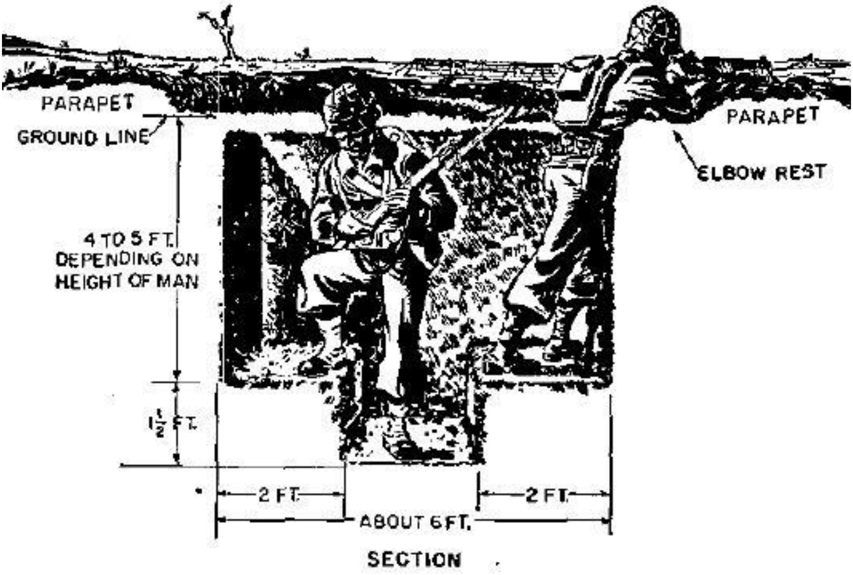
1. One man can provide protection while the other is digging.
2. It affords relief and rest for the occupants. One man rests while the other observes. In this manner, firing positions can be effectively manned for longer periods of time.
3. If one soldier becomes a casualty, the position is still occupied.
4. The psychological effect of two men together permits positions to be occupied for longer intervals.

Disadvantages

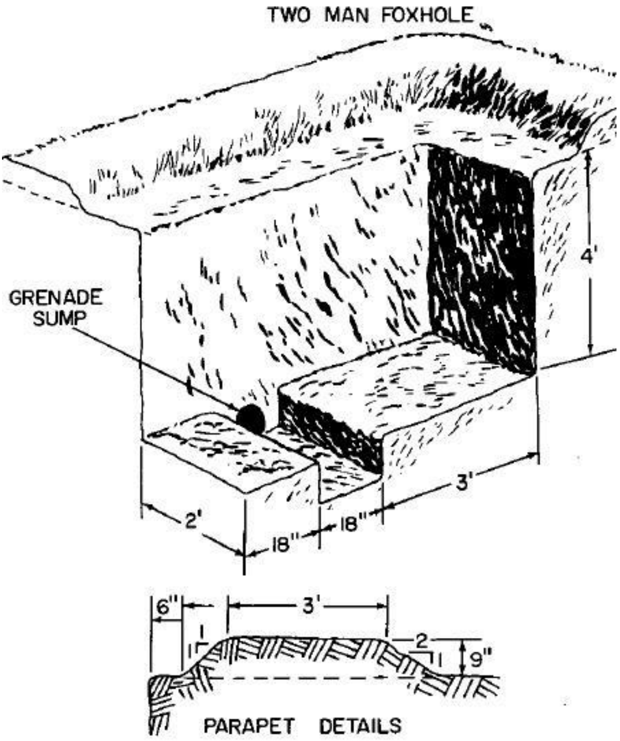
1. If a direct hit occurs, two men will become casualties instead of one.
2. The area that can be occupied may be reduced significantly

This type of Foxhole may be constructed either open, with half overhead cover, or with full overhead cover. On the modern battlefield, full overhead cover is preferred in order to conceal your position from enemy aircraft and drones. However, the open cover Foxhole provides a 360 degree field of fire. If you decide to build an open cover Foxhole, it is preferred that you build it underneath large trees to provide concealment from aircraft.

Two Man Foxholes are generally scattered around a large area in close proximity to each other. Ideally, two or three Foxholes will eventually be joined together by tunnels. This way, the movement of troops and supplies will be concealed and protected. This also provides an avenue of escape and/or protection if the area becomes overrun.



② Figure 20—Continued.



① STANDARD

Figure 29. Open two-man foxhole.

Stage 5: Revetment

The next stage is to construct a revetment. A revetment is a support for a vertical or nearly vertical earth bank which prevents the earth from caving or falling into the excavation. You will need to determine what type of revetment to construct and what materials to use for its construction. Revetments are installed to protect against:

1. Blast and earth shock from explosion.
2. Weathering of positions during extended periods of occupation.
3. Naturally unstable soil conditions.

Retaining Wall Type. This type of revetment is used in relatively unstable soils. It resists the tendency of the sides of an emplacement or shelter to slide into the excavated area. This tendency is overcome by the weight of the wall itself imbedding the lower course of the wall in the firm earth below the floor of the emplacement or shelter and the fact that it is sloped toward the side of the excavation as shown in the following image. This type of revetment may be constructed of sandbags, sod blocks and various expedients

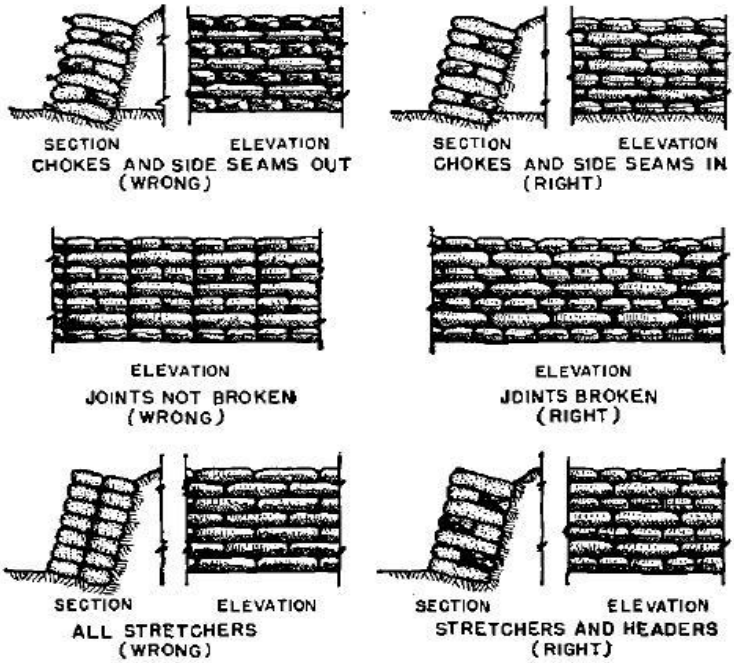


Figure 11. Sandbag revetment.

*Facing Type.*Facing revetment serves mainly to protect revetted surfaces from the effects of weather and damage caused by occupation. It is used only when soils are stable enough to sustain their own weight. This type of revetment consists of the revetting or facing material and the supports which hold the revetting material in place. The facing material may be much thinner than that used in a retaining wall. For this reason facing type revetments are preferable since less excavation is required. The top of the facing should be set below ground level so that the revetting is not damaged by tanks crossing the emplacement.

Materials. The facing may be constructed of brushwood hurdles, continuous brush, poles and dimensioned timbers, boards, corrugated metal, or burlap and chicken wire. For convenience and cost effectiveness, you will most likely opt to use brushwood hurdles. To make them, use your machete to chop down thin branches and saplings. If you place the material on a stump and chop it with your machete, you will produce quick and clean cuts. Weave the material to form a 6 foot facing as shown below. Drive the pickets into the ground to help hold them in place when weaving the brushwood.

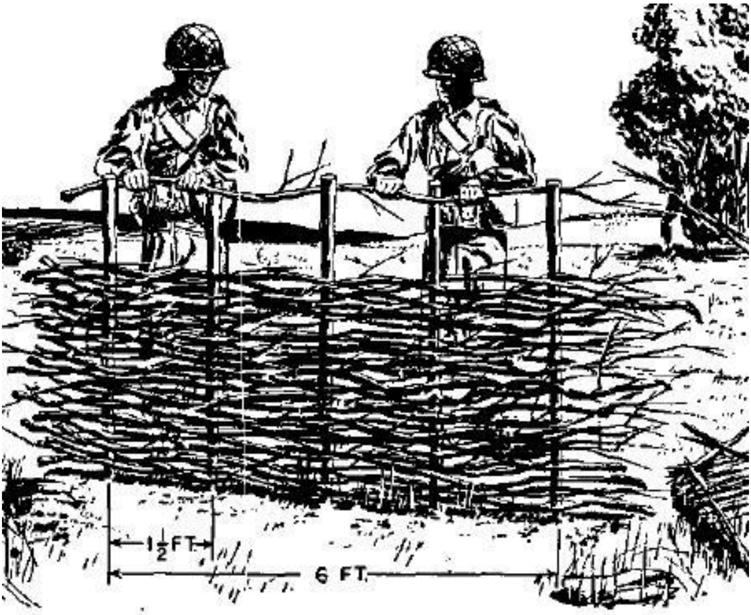
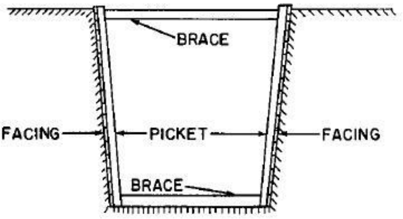
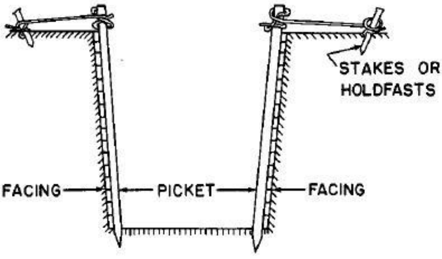


Figure 13. Building a brushwood hurdle.

*Picket Support.*The next step is to secure your facing material against the inside wall of the Foxhole. The facing material can be supported by using pickets. The pickets are driven into the ground on the position side of the facing material and held tightly against the facing (as shown in the image below) by bracing the pickets apart across the width of the position and anchoring the tops of the pickets by driving a stake into the ground and anchoring them with rope (holdfasts).





② SUPPORTED BY PICKETS

If you decide to use pickets, make sure that you cut a notch in the top to prevent the rope from slipping.

If you are installing the pickets, follow these directions:

1. Place your facing material against the wall of your foxhole.
2. Drive the pickets into the floor of the foxhole. Space the pickets evenly along the wall (about 1 ½ feet apart).
3. Tie a rope to the top of the picket and then to the top of a stake.
4. Pull the stake tightly and drive it into the ground at an angle (refer to the image on the left).

The images on the following page are examples of facing type revetments that are secured by pickets.

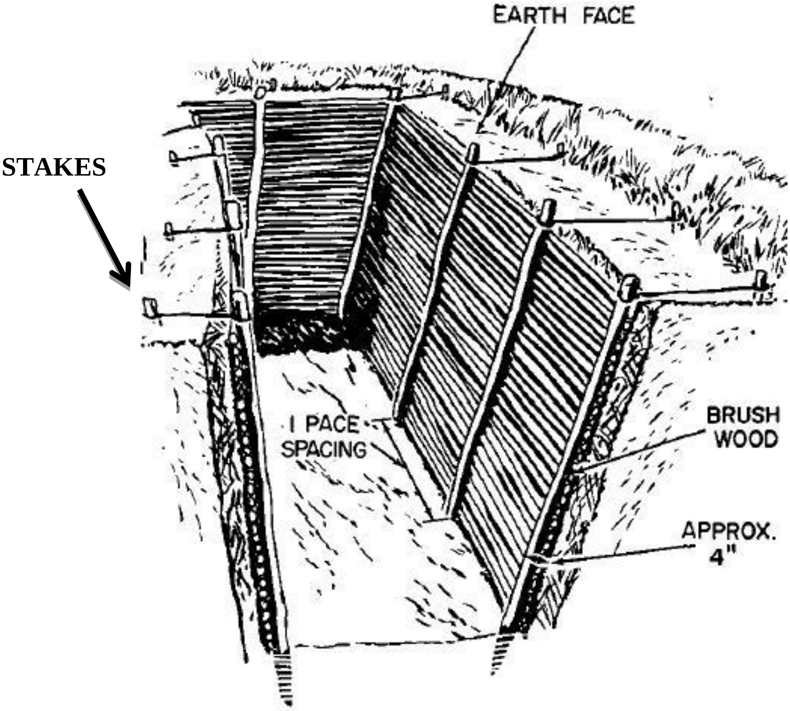
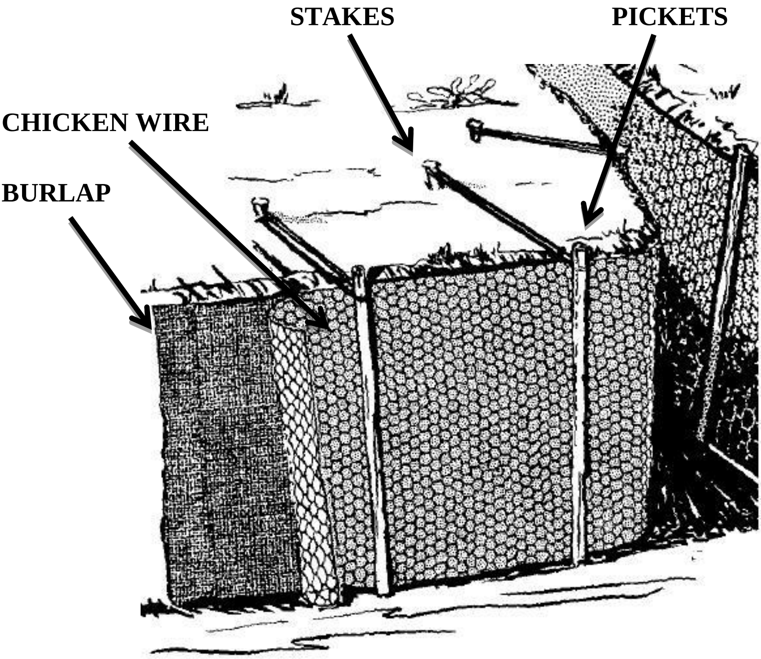


Figure 14. Continuous brush revetment.



② BURLAP AND CHICKEN WIRE

Figure 18—Continued.

Stage 6: Overhead Cover

An overhead cover is a roof for your foxhole that provides adequate protection against numerous weapons. Constructing overhead cover for your foxhole is extremely important, now more than ever. The modern battlefield is riddled with Autonomous aircraft (drones) that are equipped with heat sensing optics and highly accurate missiles.These drones continuously cover the skies searching for enemy encampments, positions, and heavy equipment. For this reason, you must take extreme measures to prevent yourself from being discovered.

As technology advances, so must our tactics. Night vision, infrared, and radio direction finding technologies have reached the civilian markets and proliferated worldwide. You must expect them to be used on the battlefield.

When constructing your overhead cover, use materials that can help reduce your heat signature such as:

1. Mylar space blanket
2. Insulated glass
3. Plenty of dirt
4. Wool blanket

A thin overhead cover can be constructed quickly from local brush material. Simply weave the material to form a panel similar to the brushwood hurdle described previously.

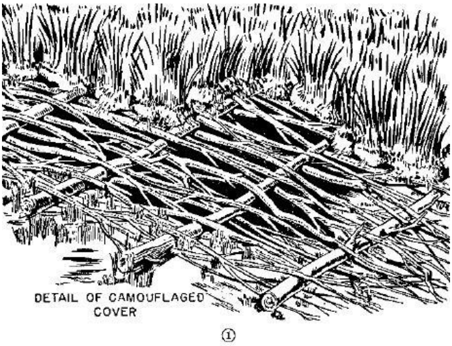


Figure 19. One-man foxhole with camouflaged cover.

A cover like this can be insulated with wool and dirt to somewhat mask your heat signature. Adding sod (grafted grass) to the top of the cover will help to camouflage the foxhole. This type of cover is good for camouflage but inadequate for protection.

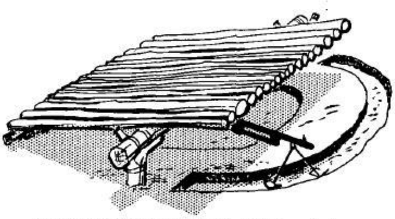
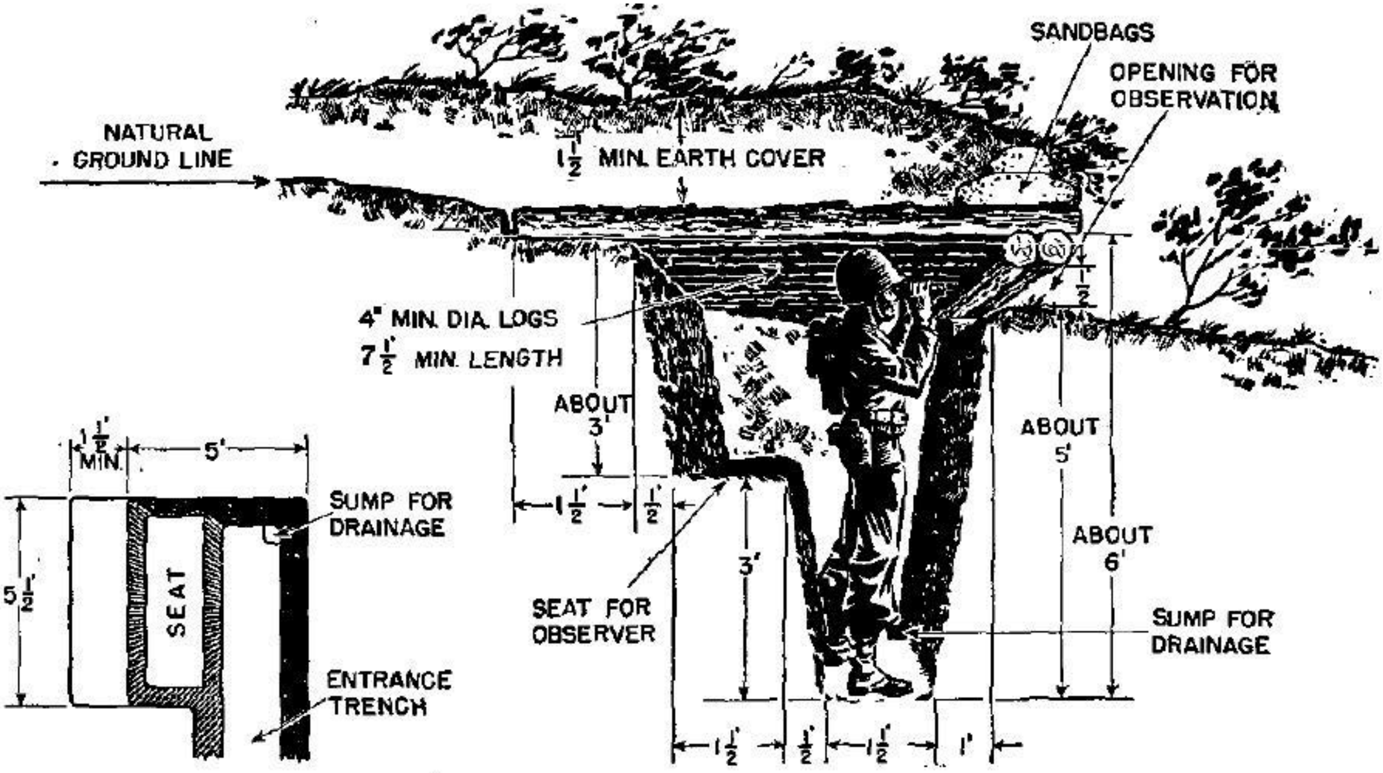


Figure 51. Automatic rifle emplacement with light overhead cover.

The picture above will give you some idea of the techniques that can be used to construct simple covers from local materials. Line the roof with a waterproof material to prevent leakage. To vastly increase the strength of your roof, add another layer of logs running the opposite direction. This achieves a lamination effect and considerably increases the strength. Cover the layers of rods/logs with dirt and sod for added protection and concealment.



PLAN

CROSS-SECTIONAL VIEW

Figure 23. Covered observation post.

Bunker with Light Overhead Cover

When establishing a position in wooded areas, it is very important to provide overhead cover to protect personnel from the shrapnel of tree bursts. A fighting bunker with light overhead cover is shown and described in the picture below. The overhead cover will stop fragments from tree and airburst artillery, and it is strong enough to withstand the effects of a direct hit by an 81-mm mortar. If the side openings are closed with sandbags to prevent the entry of grenades, the fields of fire and observation are limited to the front only. This is a serious disadvantage with this type of position. Chicken wire can be placed over the firing apertures to prevent grenades from entering the bunker. The chicken wire should be sloped with a ditch dug at the base to catch grenades as they roll off the wire.

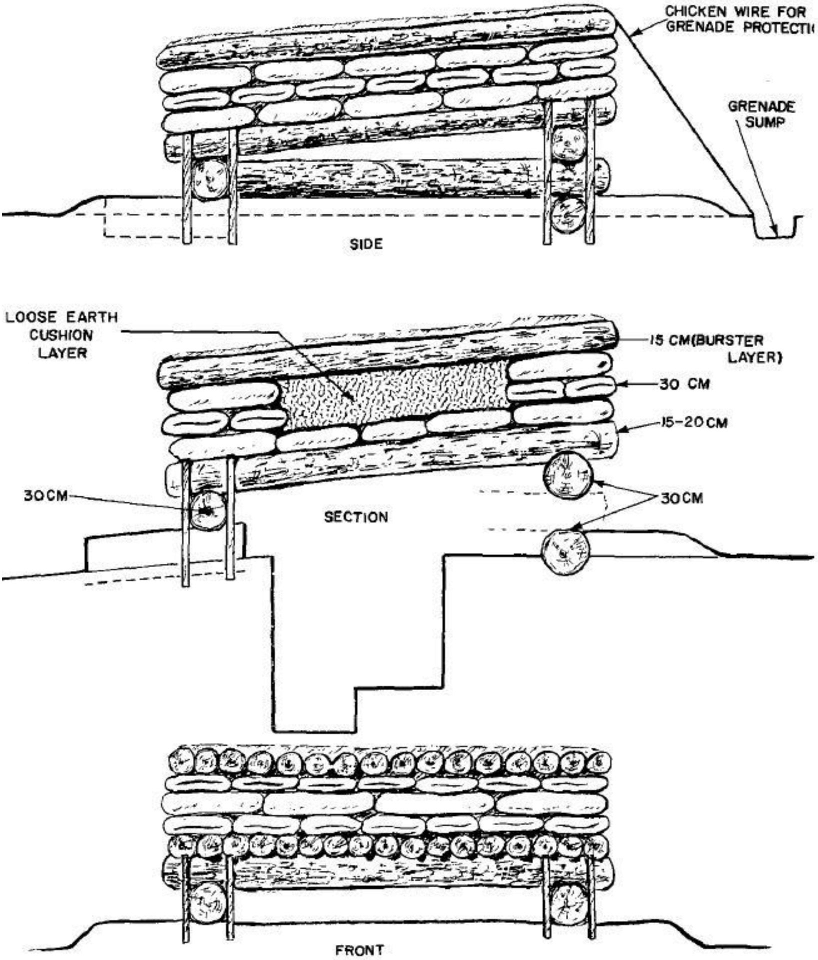


Figure 3–20. Fighting bunker with light overhead cover.

Stage 7: Concealment

Concealment is the art of evading detection. It is far more intricate than simply blending in with your local surroundings. Your movements and location can be detected by far more than just the visual spectrum. In order to effectively conceal your position and movements, you must take many things into consideration. This stage will contain more information than is necessary for effectively concealing fortifications. But, for the purposes of keeping the information organized, all aspects of concealment will be covered in this stage.

Here are some important aspects to take into consideration:

1. **Visual signatures**
    a. *Camouflage*. This is the most basic form of concealment; yet it is inherently complicated. To successfully camouflage yourself, you must attempt to blend in with the local environment. This sounds like a simple task, but today, it is not. The most obvious way to do this is by wearing specialized camouflage clothing. However,camouflage must be effective against both ground and air observation. Altering your horizontal and vertical outline makes it much more difficult for the enemy to spot you. A simple method for doing this is to lie on your stomach. This is called the prone position. The prone position is a great method for reducing your vertical signature when facing troops on the ground. However, it is not as effective against enemy aircraft. This is why you must always be cognizant about aerial observation. Aerial observation is usually more revealing than ground observation because it permits longer and more detailed study of the terrain. The use of satellites and unmanned aircraft has made aerial concealment a topic of upmost importance. The main factors which enable aerial observers to determine the nature of objects seen from the air are *form, shadow,color, movement, reflection,*and *temperature*.
        i. *Form*- Mad-made objects or groups of objects tend to have straight or uniformly curved lines and are laid out in regular patterns. In an area of irregularity, a regular object attracts attention. If the object is of a military nature, it will be conspicuous to the enemy. Its shape and its relative size are clues to its identity.

ii. *Shadow*- From the air, shadows are very noticeable, particularly on aerial photographs. Often a shadow reveals the form of an object better than its top outline. Objects such as factory chimneys, telephone poles, vehicles, and tents, for example, have distinctive shadows. Objects in the shadow of another object are more likely to be overlooked.

iii. *Movement*- The area in view below an aerial observer is so large that small objects fade into the landscape and do not attract his eye. If the object moves, however, the eye is immediately attracted, and what was unnoticed before is suddenly conspicuous. The aerial camera records the fact that something has moved when two photographs of the same area are taken with a time interval between. If an object has moved, the changed position is apparent when the two photographs are compared. The same principles hold true in ground observation.

iv. *Shine*- A particularly revealing signal to an observer is shine. Shine is the flashing of light reflected from a smooth surface. Whenever light strikes such smooth surfaces as windows, roofs, the windshields and tops of vehicles, smooth concrete surfaces, or steel helmets, that light may be reflected directly into the observer’s eye or the camera’s lens with striking emphasis. To limit the amount of shine (or glare) that you produce: Do not wear shiny objects like watches, glasses, or jewelry. These objects alone can be seen by the naked eye from hundreds of yards away when they reflect the sun. Be cautious when using the optics on your rifle. Paint your rifles and vehicles a matte color. If you wear eye glasses, try to find a pair with an anti-reflective coating. And do not wear shiny footwear.

v. *Temperature*-Ground troops and observation aircraft are equipped with very sensitive Infrared cameras. On the battlefield, during night, these assets have proven to be the most lethal resource in the conventional forces arsenal. You MUST make efforts to mask your heat signature. Your goal here is to blend in with the temperature of your surroundings. Overhead coverings and umbrellas made from woolhave been used to reduce heat signatures and break up the human outline. If you are moving above ground, covering your entire body with a wool blanket can reduce your heat signature for a short period of time. When you are stationary, you should abstain from lighting bonfires, especially at night. If you use fire, try to reduce the duration, intensity, and size of the fire. Slicing your meat (or food) very thin, will allow you to cook it rapidly. When you are done with the fire, make sure that you thoroughly saturate the fire pit with water. If you do not do this, the ground temperature will remain hot, radiate for a long time,and give away your position.Remaining underground or beneath a thick overhead cover is the most preferred option.

b. *Tracks.* Tracks can easily give away your position to aerial observers. Youmust take steps to make it difficult for the observer to notice your tracks. When parking your vehicles, make sure that they are underneath an overhead cover or that they blend in with the local setting. Park them up close to a building on its shaded side. Before you enter or exit an area, you must create a plan detailing a route that will sufficiently conceal your tracks.

FIGURE 7.—WRONG. ① Corners cut short. ② Tracks and parked vehicles contrast with terrain pattern. Succession of track loops especially noticeable. ③ Good track plan spoiled by failure of three trucks to follow plan, and good siting plan spoiled by insufficient dispersion. ④ Bad siting around perimeter of large and unusually shaped terrain feature. Newly made tracks point to position. Insufficient dispersion.

RIGHT. ⑤ Existing tracks used for access. They have not been widened noticeably. ⑥ Good use of lines in the terrain pattern. Correct dispersion. ⑦ Good use of overhead cover. ⑧ Inconspicuous existing tracks to cultivated field.

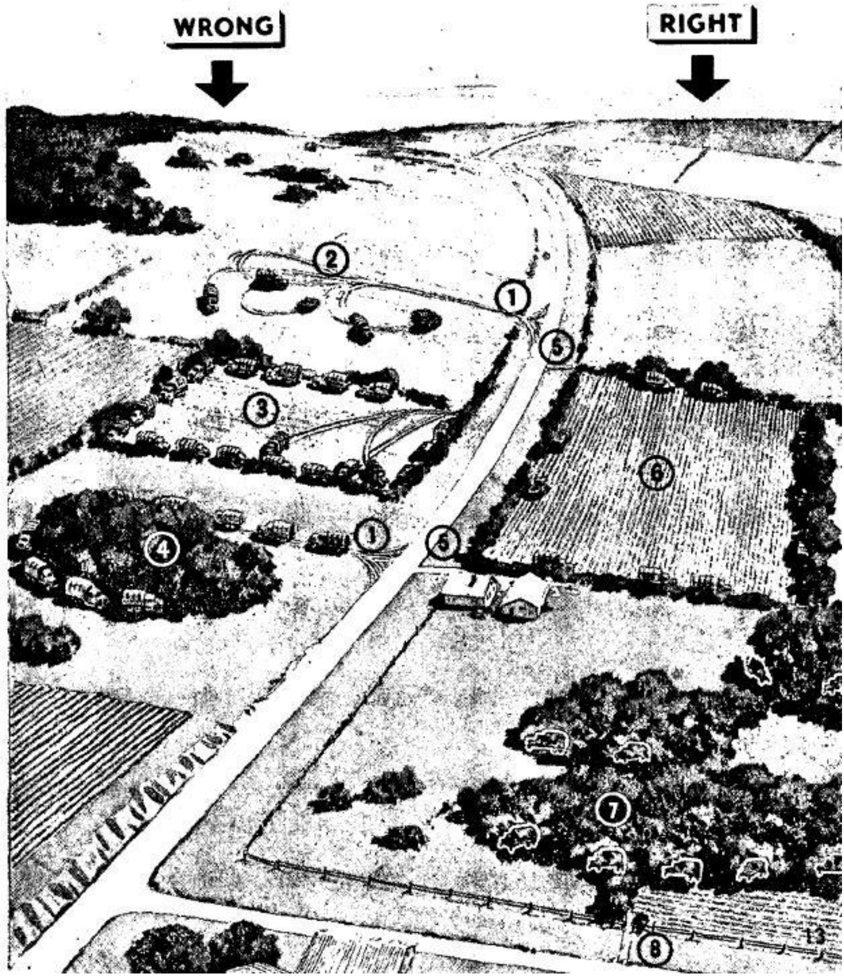


FIGURE 13 ①.—Bad siting. No enemy airman would miss the story of this scene. An undisciplined congestion of vehicles, parked without regard for the terrain pattern, must expect machine gunning and bombing.

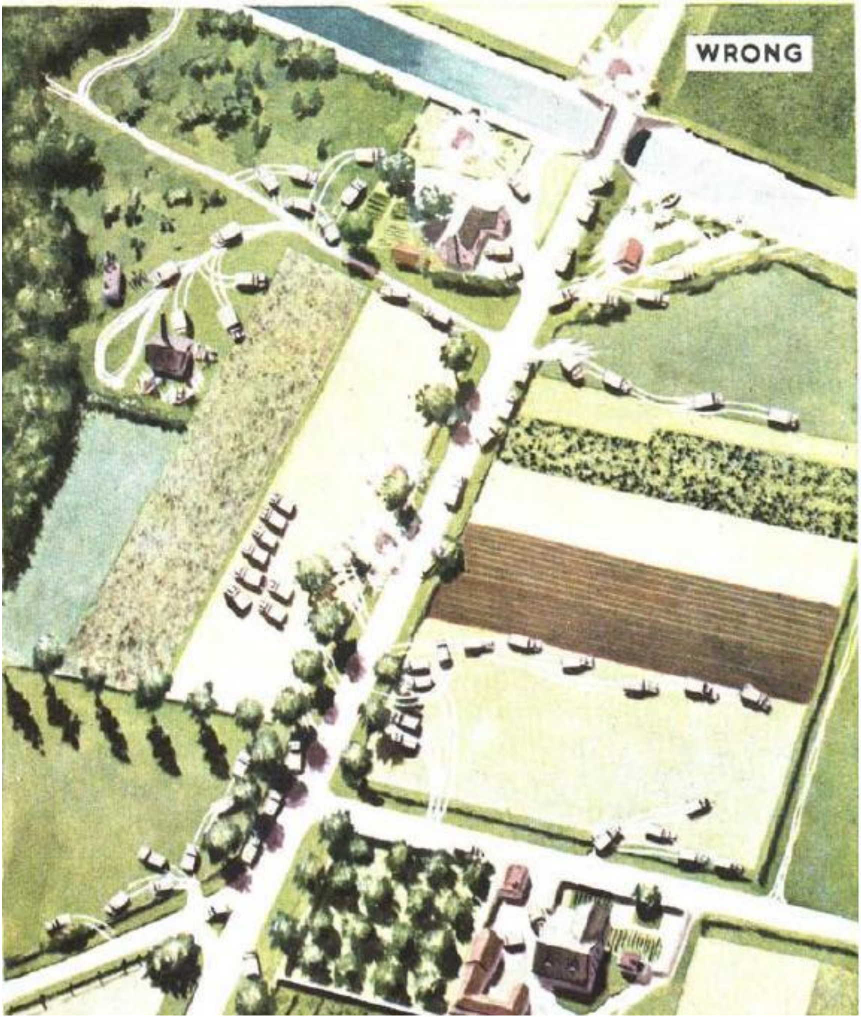
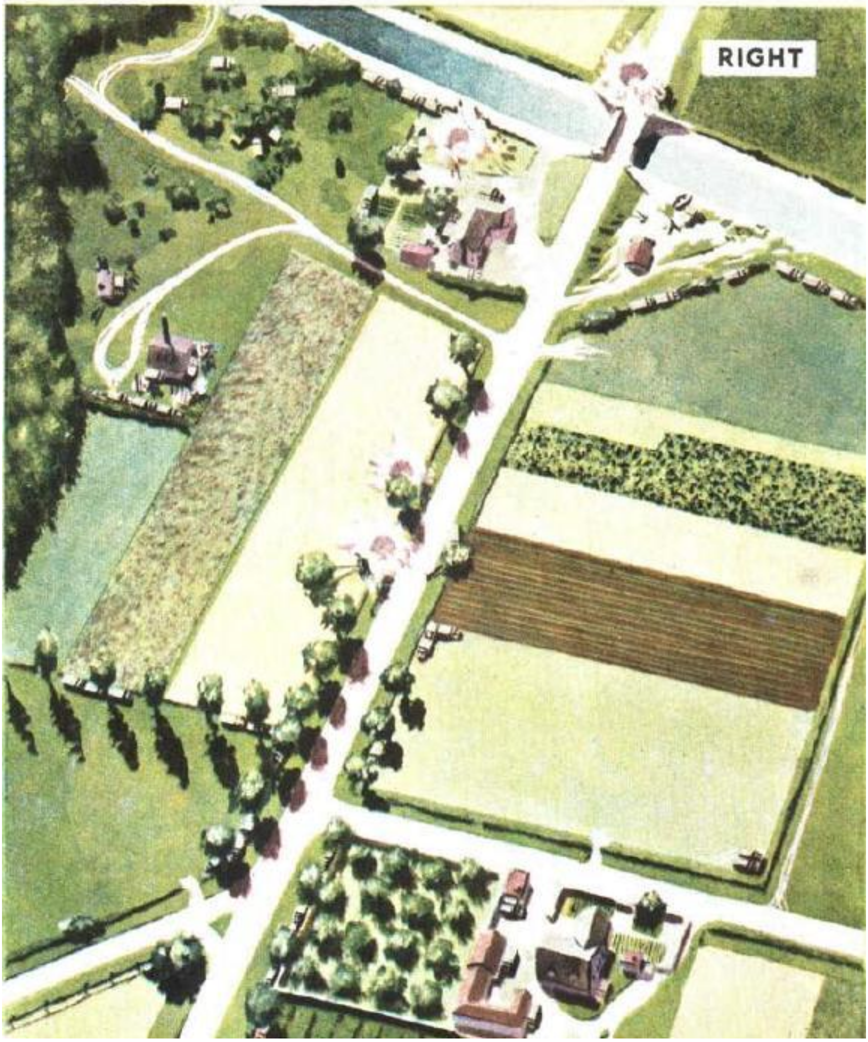


FIGURE 13 ②.—Good siting. The vehicles are still there, but the appearance of the terrain is undisturbed. Some are in shadows, others under natural cover; their shapes blend with elements in the terrain.



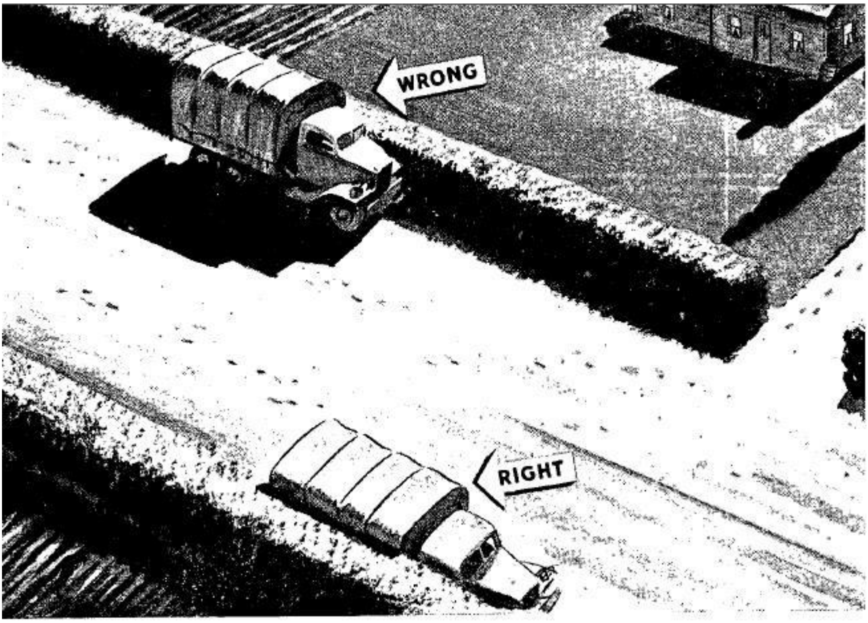


FIGURE 26.—If you must park on a road, watch that shadow. Park, as the foremost truck has done, so that the shadow is thrown into an irregular ditch or upon a bush. Do not park, as the rear truck is parked, so that the shadow of the vehicle falls on a smooth surface.

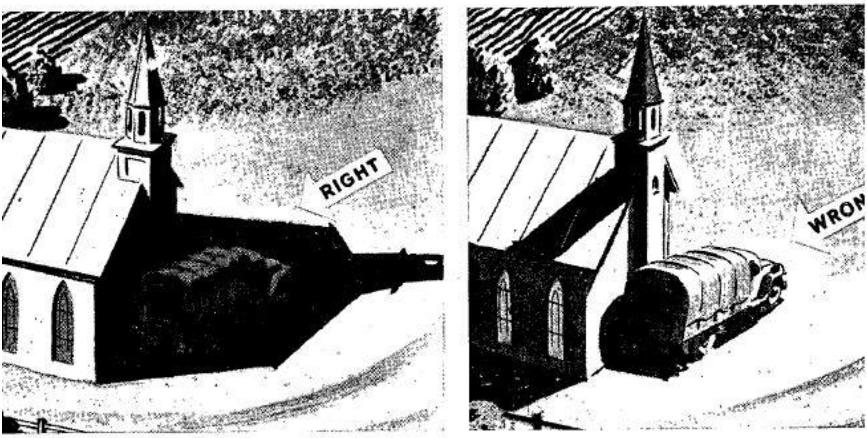


FIGURE 27 ① and ②.—Morning or late afternoon shadows are long and protective. Park your vehicle in them. But remember that shadows move. Be sure you move with them.

2. Audio/Radio signatures

a. *Talking.* While occupying your fortification, talk quietly and keep the chatter to a minimum. Your normal tone of voiceand even your whispers can be heard from hundreds of feet away. Enemy scouts use *parabolic microphones* to locate your position and eavesdrop on your conversations. To address this threat: Keep your chatter relevant and talk quietly.

b. *Radio.*Radio communication is an extremely important tool on the battlefield. However, when faced against a modern military force, your radio equipment can and will give away your location. Special equipment called*Radio direction finders*(RDF) are used to intercept your radio signal and triangulate thebroadcast origin. This equipment is constantly evolving. It is becomingmore effective and affordable every year. RDFs are even available on the civilian market. You should expect them to be used against you. The same is true regarding Wi-Fi, Bluetooth, cellphone, and satellite transmissions. To address this threat, you may be forced to forego the use of radio equipment. Instead, you may consider using field phones and wired networks. (At the time of this writing, U.S. Army Surplus Field Phones can be purchased online for about $75).Another low cost option is to extend a garden hose between foxholes. You can bury it in a shallow ditch and tape funnels to each end. You will be surprised at the sound quality obtained with a 50 foot garden hose.

c. *Gunshots.* New technology has been developed to quickly locate the position of enemy gun fire. This technology has been field tested in recent conflicts and proven effective. These *Gunshot direction finders* use an array of microphones to triangulate the position of gunshots from specific firearms. These devices are now small enough to install on combat rifles and are expected to become part of the warfighters standard equipment.To address this treat:Equip your rifles with suppressors and consider using *subsonic ammunition*. In an emergency scenario, the following schematics may be used to construct expedient suppressors. To legally construct these devices, you must be granted license from applicable Federal and State agencies. Do not attempt to make these devices without proper legal permission.

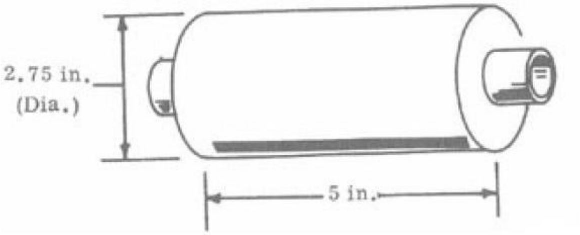
Low signature systems (silencers) for improvised small arms weapons (section 3) can be made from steel gas or water pipe and fittings.

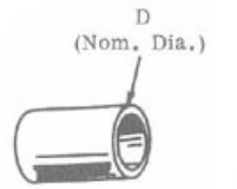
Materials Required
Grenade container
Steel pipe nipple, 6 inches (15 cm) long – see Table I for diameter
2 steel pipe couplings – see Table II for dimensions
Cotton cloth – see Table II for dimensions
Drill
Absorbent cotton

Procedure

1. Drill hole in grenade container at both ends to fit outside diameter of pipe nipple. (See Table I.)

2. Drill four (4) rows of holes in pipe nipple. Use Table I for diameter and location of holes.





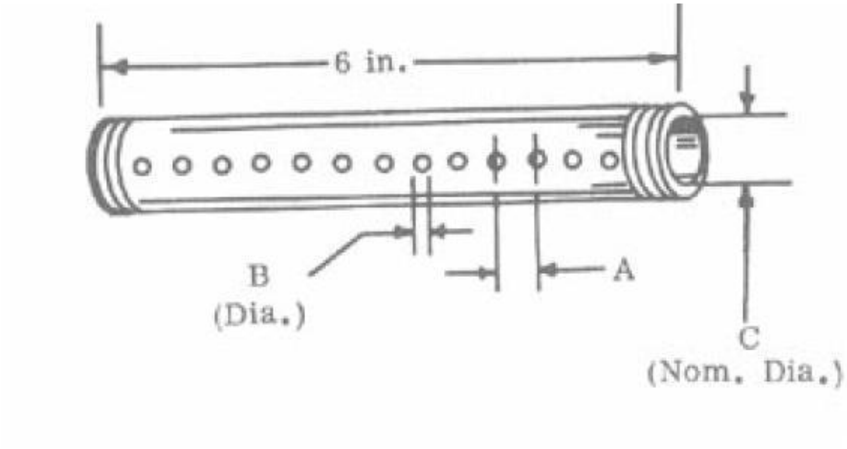
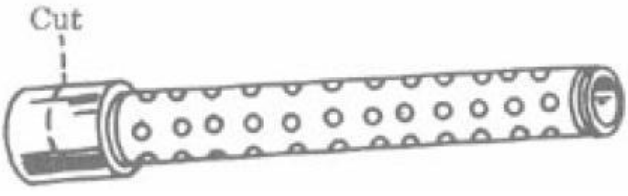


Table I
Low Signature System Dimensions

	A	B	C	(Coupling) D	Holes per Row	(4-Rows) Total
.45 caliber	3/8	1/4	3/8	3/8	12	48
.38 caliber	3/8	1/4	1/4	1/4	12	48
9 mm	3/8	1/4	1/4	1/4	12	48
7.62 mm	3/8	1/4	1/4	1/4	12	48
.22 caliber	1/4	5/32	1/8*	1/8	14	50

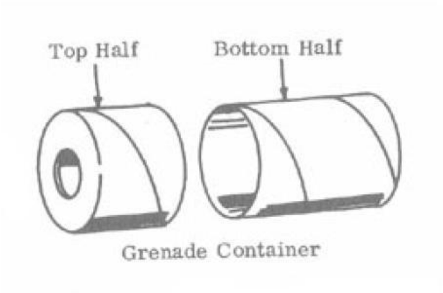
*Extra heavy pipe
All dimensions in inches

3. Thread one of the pipe couplings on the drilled pipe nipple.

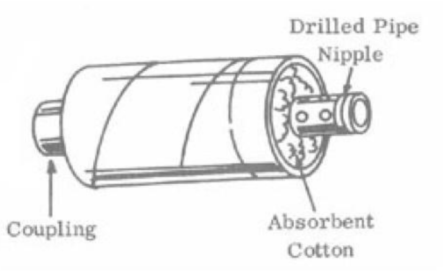


4. Cut coupling length to allow barrel of weapon to thread fully into low signature system. Barrel should butt against end of the drilled pipe nipple.

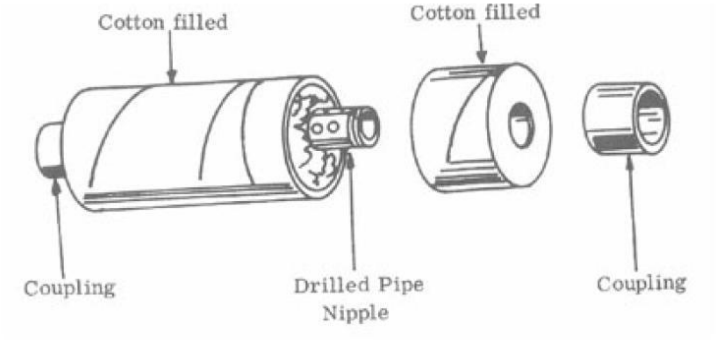
5. Separate the top half of the grenade container from the bottom half.



6. Insert the pipe nipple in the drilled hole at the base of the bottom half of container. Pack the absorbent cotton inside the container and around the pipe nipple.



7. Pack the absorbent cotton in top half of grenade container leaving hole in center. Assemble container to the bottom half.



8. Thread the other coupling onto the pipe nipple.

Note: A longer container and pipe nipple, with same "A" and "B" dimensions as those given, will further reduce the signature of the system.

How to Use

1. Thread the low signature system on the selected weapon securely.

2. Place the proper cotton wad size into the muzzle end of the system.

Table II
Cotton Wadding – Sizes

Weapon	Cotton Wad Size
.45 caliber	1-1/2 x 6 inches
.38 caliber	1 x 4 inches
9 mm	1 x 4 inches
7.62 mm	1 x 4 inches
.22 caliber	Not needed

    d. *Explosions.Seismographs* are an old technology and have become increasingly sensitive. They are used worldwide to identify the location of shockwaves within the earth. Small explosions can generate a large enough shock wave to activate seismographs. For this reason, explosives SHOULD NOT be used to excavateyour fortifications. The use of explosives must be carefully planned and limited.

3. **Odorant signatures**
    a. *Body odor and waste*. If the enemy is nearby, they can locate you using their sense of smell. If not properly disposed, human waste will give away your position. It is therefore critical to properly dispose of your waste and to maintain adequate hygiene. Wash your clothes on a regular basis and always burry organic waste.
    b. *Cigarettes and fragrances.* It may seem obvious, but it is necessary to briefly discuss. DO NOT smoke or use cologne when occupying your fortifications. If nicotine is needed, use smokeless tobacco. If cologne or fragrances are desired, use natural extracts from local plants (e.g. pine, mint).Charcoal from fire pits can be crushed into a powder and spread throughout the foxhole to neutralize odors. Or, chunks of pine can be placed throughout the fortification.
    c. *Food and tea/coffee.* Prepare your food and fragrant beverages at an upwind location within your camp.
    d. *Canines.*Enemy soldiers will deploy canines to locate combatants and explosive materials. To address this threat, it may be necessary to deploy poisoned bait or traps.

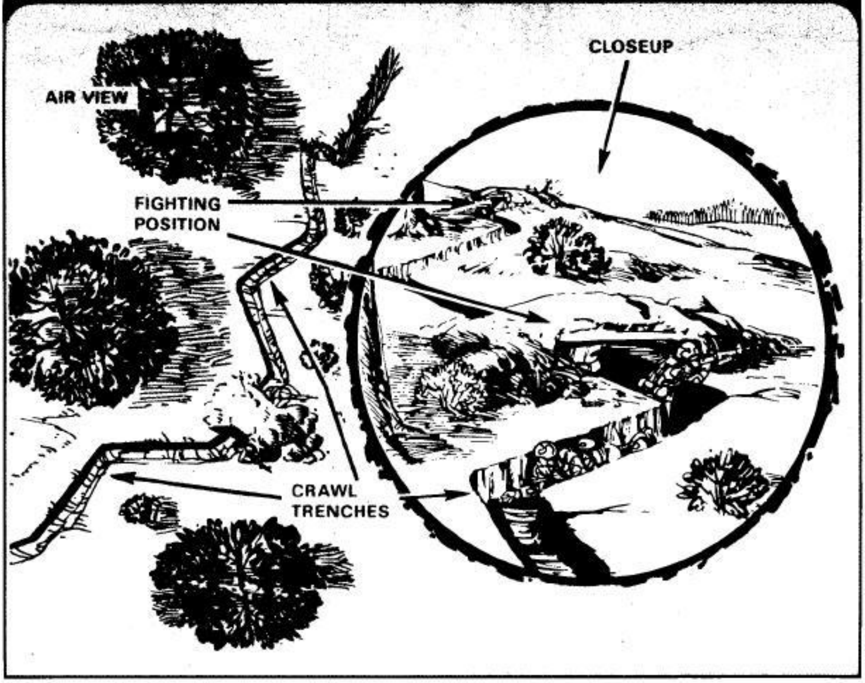
Stage 8: Trench network

Digging trenches between fighting positions is a lot of work but it is well worth the effort. Shallow trenches with parapets will allow you to safely crawl from one location to another while taking enemy fire. This enables you to: Relay information, install communication lines, install power lines, respond to calls for assistance, transport supplies, evacuate injured personnel, retreat, etc.When time permits, trenches should be covered and camouflaged, upgrading them to tunnels.

TRENCHES

When there is time, dig trenches to connect fighting positions. Trenches provide covered routes between positions. The depth of the trenches depends on the time and type of help and equipment available to dig them. Without engineer help, crawl trenches about 1 meter (3 feet) deep and two thirds of a meter (2 feet) wide are probably all that can be dug. Dig the trenches zigzagged so that the enemy will not be able to fire down a long section if he gets into the trench, and so that shrapnel from shell bursts will lose some of its effectiveness.

AIR VIEW OF TRENCHES



Stage 9: Denial barriers

The main purpose of denial barriers is to restrictthe enemy's mobility in orderto maximize the effectiveness of your forces. They are used to protect your flank and to prevent large scale frontal assaults. They can be offensive or defensive in nature. In this publication, we will briefly discuss defensive barriers.

When designing and planning barriers, you need to be aware of how they appear from aerial observation. Try to use natural objects such as: large stones, logs, mud, brambles, twigs, and pits.Organize the barriers in an asymmetrical manner so as not to appear man made. When installing manmade barriers, conceal them under foliage, thickets, or within the wood line.

The two main targets for ground barriersare vehicles and infantry. Several types of barriers can be deployed to restrict theiradvance and mobility.

1. *Barbed wire.*Barbed wire is by far the most common barrier used in modern warfare. It is primarily deployed to restrict the movement of infantry. When installing the wire, allow it to hang loosely between posts. This makes the barb wire difficult to cut and better withstand the effects of explosions. It also helps to break up the symmetric outline ofthe wire, allowing the barrier to blend in with the environment. For concealment, place the wire barriers in tall grass or wood lines. If fence posts are unavailableyou can use live saplings and trees as posts. The barrier should bemultiple layers thick to increase the difficulty of traversing it. Install barbed wire barriers at least 40-50 yards ahead of your fortification. This distance is adequateto protect your position against hand grenades.
2. *Bollards.* These are used to deny access to light vehicles. Expedient bollards can be made from innumerous objects. You can obtain most of your materials by scavenging. Fence posts, 4x4's, and parking blocks can be acquired from your local surroundings. Bury the bottom, half way into the ground and allow the other half to stand erect out of the ground. Space the bollards about five feet apart. They will be effective at stopping unarmored vehicles and slowing down some armored vehicles.
3. *Abatis.*An abatis is an obstacle made from downed trees. They are effective against vehicles and ground troops. The branches are typically stripped and sharpened to a point with the points facing the enemy. To increase stability, the trunks and branches are fastened together with wires and staked to the ground. Trip wires and punji sticks can be

installed between the tree trunks. Fire is a major weakness of the abatis. A fire retardant coating can be made by mixing boric acid and borax in a pot of hot water and stirring until dissolved. Spray the solution on the abatis. A road abatis (as shown on the next page) should extend for at least 75 yards.

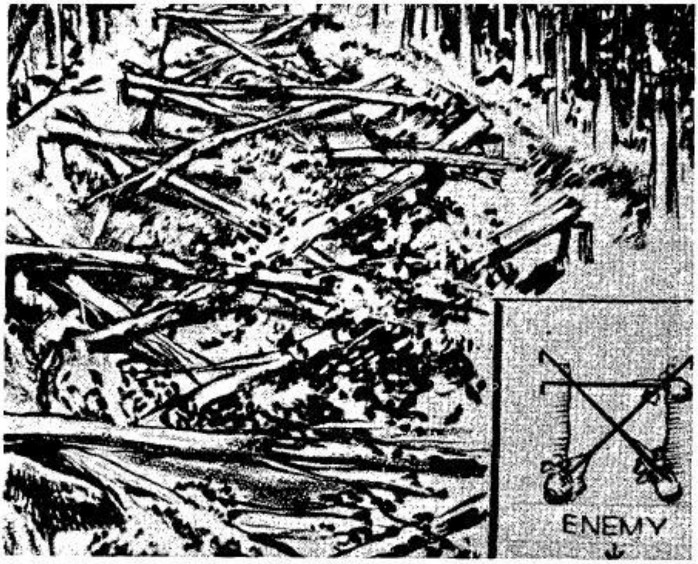
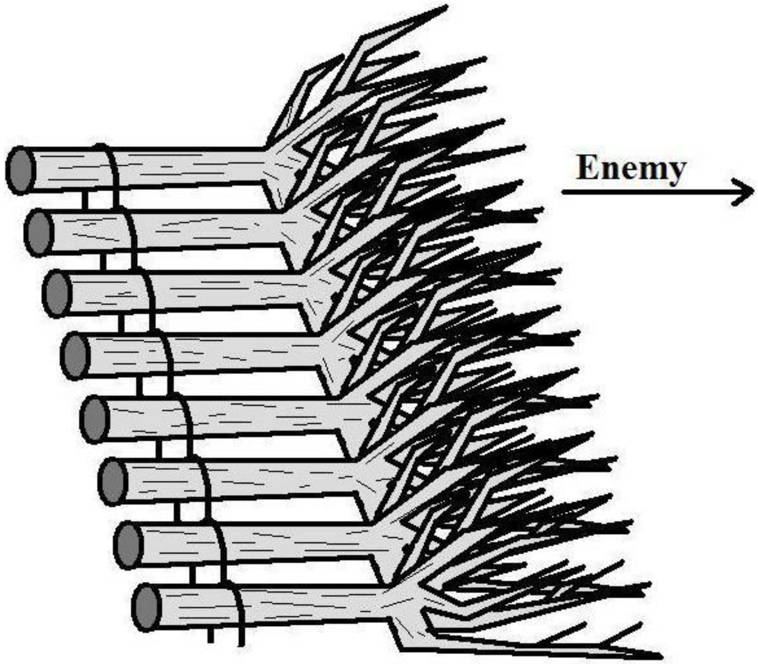


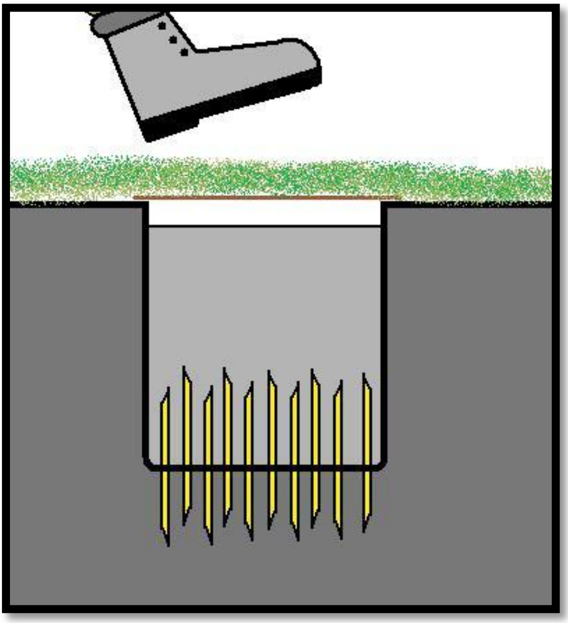
Figure 5–4. An abatis. One of the most effective obstacles to the movement of wheeled and tracked vehicles through wooded areas.

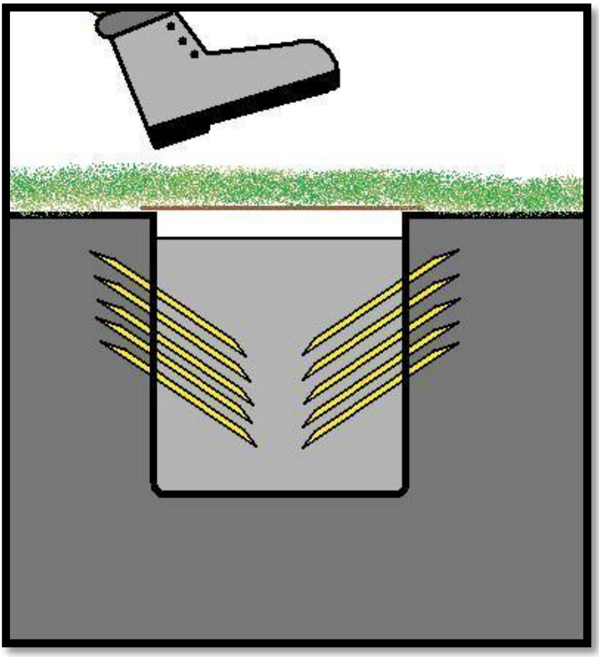
j. Abatis. When a road, trail, or firebreak passes through heavily wooded areas, abatis are effective obstacles to vehicular movement. They are considered to be demolition obstacles only in the sense that the trees required may be felled by explosives, as well as by handtools (fig. 5–4).

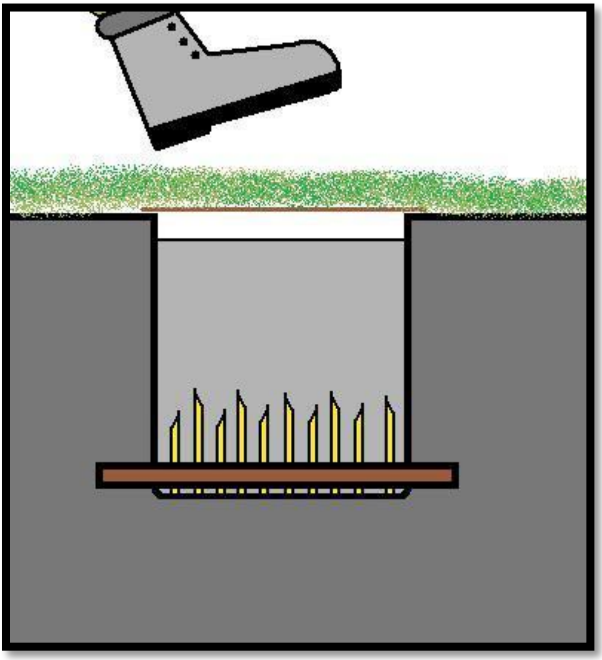

ABATIS

4. *Thorns*. Thorns are a natural barrier to animals and humans. They can be used as barriers inside the perimeter of your fortification. During the spring and summer, they also provide good concealment. Blackberry and raspberry plants are a pervasive type of thorn bush in the United States.Theycan be planted as barriers and used to provide sustenance. Choose a species that has tough thorns and thick branches.
5. *Stones.* Stones can be a serious obstacle for ground troops and vehicles. They are a tripping hazard and can cause serious blunt force trauma to a soldier who falls upon them. The increased weight of the soldiers pack intensifies the injury. Stones can prevent soldiers from using the prone and kneeling fighting positions and will cause injury if they do. Use heavy stones that have points. Bury them halfway into the ground and place trip wires around them. Conceal them underneath chopped brush.
6. *Trip wire*. Trip wire is portable, lightweight, and should be carried by the individual soldier. A small spool of trip wire and a few hand crafted stakes can create a labyrinth of obstacles. Trip wires are normally used in conjunction with other traps, such as punjis, mines, or deadfalls. Always carry trip wire. You can use it to supplement barriers or quickly create obstacles during offensive engagements.

7. *Pits.*Pits are easy to make and can be booby trapped with all types of devices. Pits are typically covered with a lattice of thin twigs and camouflaged with leaves; you can use thick cardboard to cover the pit if it’s available. The most common pit contains spikes at the bottom and within the walls to injure or trap the feet. The spikes can be secured by driving them into a wooden board or bag of concrete. If able, use steel spikes that are barbed. Once the spike pierces the foot, the barb will prevent the soldier from lifting his foot off of the spike thereby keeping him stationary. Always document the location of your pits so you can remember EXACTLY where they are.
8. *Punji spikes.* Punji spikes are pieces of bamboo that have been sharpened to a point and pushed into the ground. Punji spikes are sharp enough to pierce combat boots. They were used in the Vietnam War and were commonly placed inside a short pit that was covered with a lattice and concealed with leaves. To intensify the injury, the tips were covered in human feces. In order to make punji spikes, collect bamboo that is dead and dry. Cut the bamboo at each node using your saw and then split it four ways along the length using your machete. Sharpen both sides of the split pieces and push them into the ground.







9. *Terrain features.*Terrain features can be difficult to traverse for ground troops and vehicles. Slopes and swamps both pose as serious obstacles for vehicles and ground troops. These terrain features can be crossed by ground troops; however, they will tire quickly from physical exertion. To secure these areas and use them as barriers, you must completely destroy any road or causeway that goes through the area. An abatis can be used to temporarily block the roads while further demolitions take place. Large bodies of water like rivers and lakes are great locations to set up camp. Rivers make great barriers. They are notoriously difficult for ground forces to cross, especially if the banks are defended.
10. *Irritants.*If you are working effectively with local law enforcement, then you should be able to acquire chemical irritants such as tear gas. Canisters of tear gas can be placed along the perimeter of your fortification and attached to trip wire. Bear spray can be used as a substitute if tear gas cannot be obtained.

URBAN FORTIFICATION

All fortifications previously described can be used in an urban setting. However, when occupying an urban environment, you might choose to fortify some buildings. Buildings provide many beneficial characteristics to the urban war fighter:

1. They conceal defensive positions from ground and aerial observation.
2. With minimal preparations, the structures can be well fortified.
3. Tall buildings provide protection against mortars for soldiers in the streets or alley ways.
4. They are a clean and dry environment and can be used for storage.

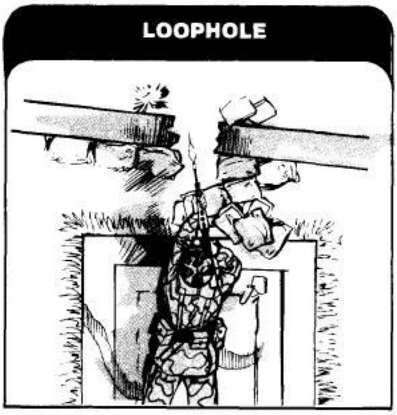
Loopholes

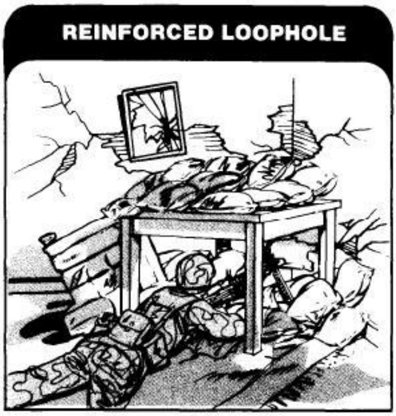
Loopholes are small openings within a fortified structurewhich are used to engage the enemy. In buildings, they are commonly at the floor level. In brick or block buildings, small holes are knocked into the outer wall using a sledgehammer (Note: You can also use the blunt side of an axe if you do not have a sledgehammer). The loophole is then fortified with sandbags or other protective material. If you do not have sandbags, you can use boxes of dirt. Often times, widows are also used as loopholes.

LOOPHOLES

A loophole blown or cut in a wall provides cover for a fighting position. Using loopholes reduces the number of windows that have to be used. Cut or blow several loopholes in a wall so the enemy cannot tell which one you are using. When using a loophole, stay back from it. Do not let the muzzle or flash of your rifle show through it.

To reinforce a loophole and add cover, put sandbags around it. If you will be firing from a prone position on the second floor, put sandbags on the floor to lie on. That will protect you from explosions on the first floor. Use a table with sandbags on it or some other sturdy structure to provide overhead cover. That will protect you from falling debris.


LOOPHOLE


REINFORCED LOOPHOLE

Tunnels

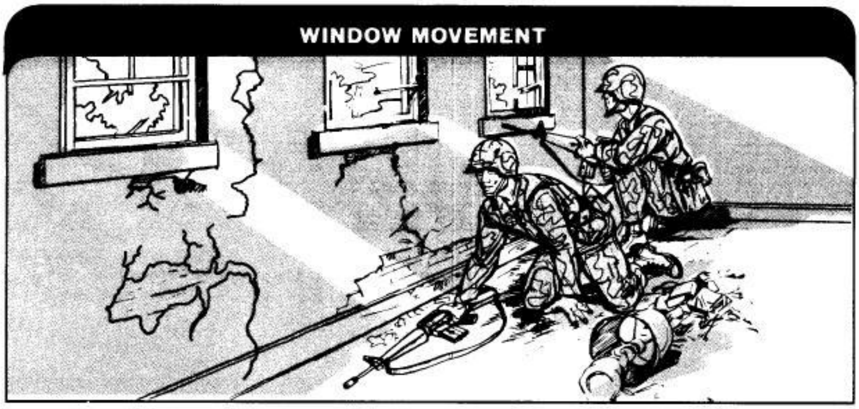
In an urban environment, it is critical to have an avenue of escape and an area to take cover; tunnels can be used for both. They are typically hidden underneath the floor of a building. They can be used to connect buildings, transfer supplies, evacuate injured personnel, and install communication lines.They are a valuable asset and worth every drop of sweat to construct.

To dig a tunnel inside a residential building, you will need to remove part of the carpet and then use a circular saw to cut a hole in the floorboard. If your building is on a concrete foundation, you will need to break through the concrete before digging your tunnel. To do this, you can use a jackhammer,a rotary hammer (with a chisel bit) or a sledgehammer. Once you break up the concrete, you will need to cut through the metal rebar. This can be done with an angle grinder.

Once you have opened up the floor and broken through the concrete you can start digging your tunnel. All of the material that you excavate from your tunnel should be used to create defensive positions inside the building. You can use the piece of cut floorboard as a joist to support sandbags covering your loopholes.

HOW TO MOVE IN A BUILDING

When moving in a building, do not silhouette yourself in doors and windows. Move past them as discussed for outside movement.

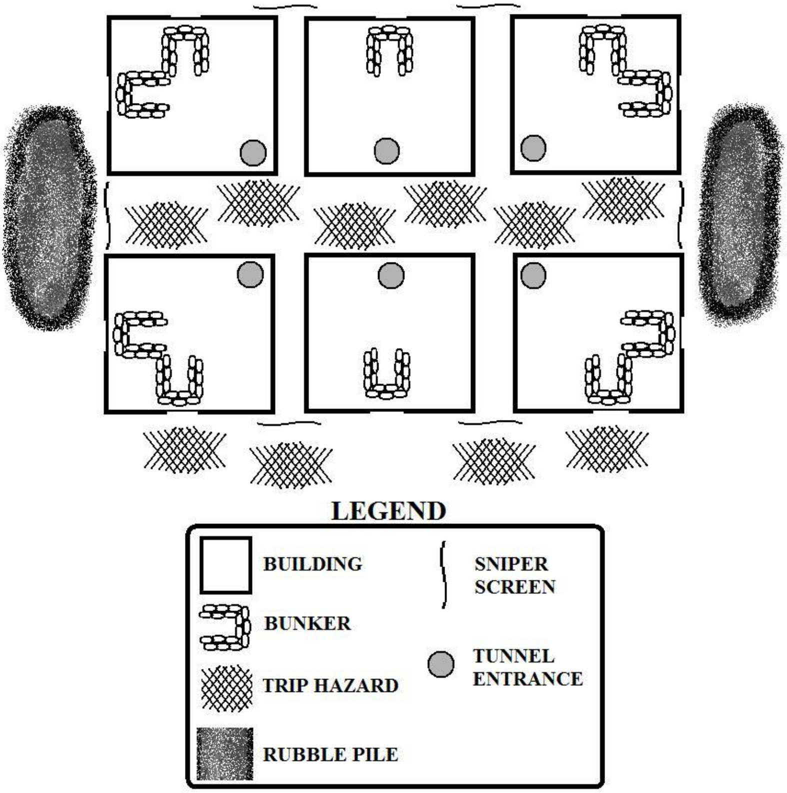

WINDOW MOVEMENT

Barriers

Road blocks. Dumpsters and cars can be used to block roads and neighborhoods. However, just like the roadway abatis, you want your car blockade to be long and difficult to traverse. You can dump large piles of dirt, sand, rock, or bricks around the cars to make it more difficult for them to be moved.

Sniper screens. Sniper screens conceal your movements from enemy snipers. They are simply large pieces of fabric slung between two buildings to conceal alley ways, and streets from a snipers view.You can use bed sheets, curtains, blankets or large spools of cloth if available.

*Doors and windows.*Barricade your doors and windows to restrict access to the inside of the building. One way to easily strengthen a door is by installing 5 inch steel screws in to the dead bolt strike plate. For the windows, remove the trim and barricade the windows with planks. You may want to leave an opening in the window barricade to act as a loophole.



FINAL WORDS

Thank you for reading Series 1 of the CDN guidebooks. This publication will undergo annual revisions. To submit changes or additions, please leave a comment in the Amazon review. If you are an artist and would like to submit illustrations for this guidebook, please contact me through Amazon, I will respond promptly.

Thanks and stay vigilant!

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